

**Notice of Allowability**

Application No.

10/626,273

Examiner

Dennis L. Vautrot

Applicant(s)

AYACHITULA ET AL.

Art Unit

2167

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment dated 11/17/2006.
2. ☒ The allowed claim(s) is/are 1-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>20070130</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment  |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|  | 9. <input type="checkbox"/> Other _____  |

### **DETAILED ACTION**

1. This Action is responsive to the applicant's amendment filed 17 November 2006. After a thorough search and examination of the present application, and in light of a telephone interview conducted 1 February 2007 and the prior art made of record, Claims 1 – 34 are allowed.

### ***Drawings***

2. The drawings filed on 24 July 2003 are accepted.

### ***Examiner's Amendments***

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

4. Authorization for this Examiner's amendment, listed below, was given in a telephone interview with Mr. Michael E. Hudzinski (Registration Number 34,185) on 1 February 2007. The interview summary is attached.

5. Please amend the claims as follows:

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1. (Currently Amended) An abstraction layer embodied on a computer-readable storage media for a database containing database records each including a plurality of fields stored in one or more tables, the fields being associated with each associated record by a key disposed in at least one key column of each of the one or more tables, the abstraction layer comprising:

- a key column identifier table that identifies the at least one key column; and
- one or more metadata tables containing metadata relating to the database, the one or more metadata tables including at least:

- a controls table containing control records corresponding to fields of the database, the control record for each field including at least a control key associating the control record with the field and at least one metadatum corresponding to the field, wherein functionality of the database can be selectively extended by modification of the controls table;

- wherein the abstraction layer is separate from the database, and the abstraction layer provides an interface to the database independent of an underlying model and functionality of the database thereby providing extensible functionality for the database separate from the underlying model and functionality of the database.

21. (Currently Amended) A method for accessing a database embodied on a computer-readable storage media containing database records each including a plurality of fields stored in one or more tables, the fields being associated with each

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associated record by a key disposed in at least one key column of each of the one or more tables; the method comprising:

formulating a database access command using metadata related to the database contained in an abstraction layer separate from the database, the abstraction layer including a key column identifier table that identifies the at least one key column, and the metadata for each database field being accessible using an abstraction layer control record associated with the corresponding database field; and executing the formulated database access command to access the database, the abstraction layer providing an interface to the database independent of an underlying model and functionality of the database; and

providing extensible functionality for the database separate from the underlying model and functionality of the database, wherein the extended functionality can be effected by selective modification of the control record.

### ***Reasons For Allowance***

6. This application is for a data abstraction layer for a database, which is isolated and separate from the database for which the extensible functionality is being provided. The abstraction layer provides the necessary information to the user application for accessing the database, in part, by means of a key column table, which identifies the key/ID columns of the database. In a response dated 17 November 2006 to an Office action dated 23 August 2006, Applicant distinguished the cited prior art, (Rappold III, US Patent Application Publication 2004/0117397) by stating on page 16, "Unlike Rappold which requires some

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connection to the database including apriori knowledge of the database in order to successfully access the database, **no part of the abstraction layer recited in claim 1 is embedded or provided in the database itself.**” Another key point of distinction is that the extensibility of the abstraction layer is not based on the underlying model and functionality of the database, rather it is based on modifying a controls table. This is argued on page 16 of the 17 November 2006 response – “On the other hand, **the abstraction layer as recited in amended claim 1, teaches extensible functionality for the database separate from the underlying model and functionality of the database.**” After consideration of these arguments in combination with the amendments and further searching of the prior art, the arguments provided are persuasive.

7. The following is an examiner’s statement of reasons for allowance:

The combination of the following clauses, as described in the claimed subject matter of each of the independent claims 1, 21, and 27 are novel:

**“...functionality of the database can be selectively extended by modification of the controls table; wherein the abstraction layer is separate from the database and the abstraction layer provides an interface to the database independent of an underlying model and functionality of the database thereby providing extensible functionality for the database separate from the underlying model and functionality of the database.”**

With the addition of the language resulting from the latest amendment, the claims now appear to be novel and patentably distinct from the prior art.

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A thorough search for the prior art in the EAST database and on domains (NPL-ACM, Google.com, IEEE Xplore) has been conducted. The prior art searched and investigated in the database and domains does not fairly teach or suggest the teaching of the claimed subject matter as described above and reflected by the combined elements in each of the independent claims 1, 21, and 27.

The dependent claims 2 – 20, 22 – 26, and 28 – 34 depending on independent claims 1, 21, and 27 respectively, are also distinct from the prior art for the same reasons.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis L. Vautrot whose telephone number is 571-272-2184. The examiner can normally be reached on Monday-Friday 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dv  
1 February 2007



CHRISTIAN CHACE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

